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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,030	11/20/2003	Jing-Jong Pan	LWAVP021	7162
51111	7590	06/15/2007		
AKA CHAN LLP 900 LAFAYETTE STREET SUITE 710 SANTA CLARA, CA 95050			EXAMINER PHAN, HANH	
			ART UNIT 2613	PAPER NUMBER
			NOTIFICATION DATE 06/15/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-INBOX@AKACHANLAW.COM

**Office Action Summary**

Application No.

10/718,030

Applicant(s)

PAN ET AL.

Examiner

Hanh Phan

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is responsive to the Amendment filed on 04/03/2007.
2. The indicated allowability of claims 2-9 and 11-22 is withdrawn in view of the newly discovered reference(s) to Harker et al (Pub. No. US 2004/0051932), Kim (US Patent No. 6,297,901) and Scerbak et al (US Patent No. 4,909,612). Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Harker et al (Pub. No.: US 2004/0051932).

Regarding claims 1 and 10, referring to Figure 6-8, Harker et al teaches an integrated variable optical attenuator (i.e., an integrated variable optical attenuator 600, Fig. 6) comprising:

a polarization element (i.e., a polarization rotating medium 504, Fig. 6) for continuously varying the state of polarization of polarized light (i.e., the polarized light

Art Unit: 2613

beam 502, Fig. 6) incoming to the integrated variable optical attenuator responsive to a control signal (i.e., page 2, paragraphs [0016]-[0037] and page 1, paragraphs [0008]-[0012]); and

a polarization-sensitive optical isolator (i.e., isolator 102, Fig. 6) fixed with respect to the polarization element (i.e., a polarization rotating medium 504, Fig. 6) so that the amount of light polarized light passing through the polarization element and the polarization-sensitive optical isolator can be varied by the control signal (i.e., page 2, paragraphs [0016]-[0037] and page 1, paragraphs [0008]-[0012]).

Regarding claims 2, 4, 5 and 11, Harker et al further teaches wherein the polarization element comprises a liquid crystal cell or a PLZT phase retarder or a low saturation field, garnet Faraday rotator (i.e., a polarization rotating medium 504 can be a liquid crystal cell 316, Fig. 6, page 2, paragraphs [0016]-[0037] and page 1, paragraphs [0008]-[0012]).

Regarding claim 3, Harker et al further teaches the liquid crystal cell comprises a liquid crystal material selected from the group comprising PAN liquid crystal, TN liquid crystal, and HAN liquid crystal (i.e., Fig. 6, page 2, paragraphs [0016]-[0037], page 1, paragraphs [0008]-[0012] and page 3, paragraph [0038]).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2613

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harker et al (Pub. No.: US 2004/0051932) in view of Scerbak et al (US Patent No. 4,909,612).

Regarding claims 6 and 12, Harker et al differs from claims 6, 12 in that he fails to specifically a first linear polarizer and a second linear polarizer. However, Scerbak et al in US Patent No. 4,909,612 teaches a first linear polarizer and a second linear polarizer (i.e., Figure 1, col. 3, lines 25-67 and col. 4, lines 1-65). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the first linear polarizer and second linear polarizer as taught by Scerbak et al in the system of Harker et al . One of ordinary skill in the art would have been motivated to do this since allowing assuring a given linear polarization of the optical beam.

Regarding claim 7, the combination of Harker et al and Scerbak et al teaches the first and second linear polarizer comprise first and second polarization gratings respectively (i.e., Figs 1 and 2 of Scerbak et al, col. 5, lines 66-67 and col. 6, lines 1-47).

Regarding claim 8 and 9, the combination of Harker et al and Scerbak et al teaches the polarization-sensitive optical isolator comprises a first linear polarizer proximate said polarization element, a half-wave plate, a Faraday rotator and a second linear polarizer (i.e., Fig. 1 of Scerbak et al, col. 3, lines 25-67, col. 4, lines 1-65, col. 5, lines 66-67 and col. 6, lines 1-47).

Regarding claims 13 and 14, the combination of Harker et al and Scerbak et al teaches the transmission axis is aligned with polarized light from the liquid crystal cell with no voltage applied between the electrodes (Figs. 6-8 of Harker et al).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harker et al (Pub. No.: US 2004/0051932) in view of Kim (US Patent No. 6,297,901).

Regarding claim 15, referring to Figures 1-4 and 6-8, Harker et al teaches an integrated laser diode assembly comprising:

a laser diode (i.e., a laser beam 502, Fig. 6);

an integrated variable optical attenuator (i.e., 600, Figs. 7 and 8), the integrated variable optical attenuator arranged and oriented to receive the light, the integrated variable optical attenuator further comprising: a liquid crystal cell (i.e., 504, Figs. 7 and 8) having first and second plates (i.e., 604 and 506, Figs. 7 and 8), each plate having an electrode mounted thereon, the liquid crystal cell (504, Figs. 7 and 8) rotating polarized light responsive to the amount of voltage applied between the electrodes (i.e., page 2, paragraphs [0016]-[0037] and page 1, paragraphs [0008]-[0012]); and

an optical isolator core (i.e., optical isolator 102, Figs. 7 and 8) having a first polarizer (506, Figs. 7 and 8) fixed to the second plate of the liquid crystal cell, a Faraday rotator (208, Figs. 7 and 8) fixed to the first polarizer, and a second polarizer (i.e., 210b, Figs. 7 and 8) fixed to the Faraday rotator, the amount of polarized light passing through said liquid crystal cell and said optical isolator core controlled by the

Art Unit: 2613

amount of voltage applied between said electrodes of said liquid crystal cell (i.e., page 2, paragraphs [0016]-[0037] and page 1, paragraphs [0008]-[0012]).

Harker et al differs from claim 15 in that he fails to specifically teach a first lens proximate the laser diode, the first lens arranged and oriented with respect to the laser diode to collimate light from the laser diode, a second lens proximate the second polarizer of the optical isolator core opposite the Faraday rotator, the second lens arranged and oriented to focus light from the integrated variable optical attenuator, and a section of output optical fiber having an end, the output optical fiber section arranged and oriented with respect to the second lens so that light from the second lens is focused at the end of the output optical fiber section. Kim, from the same field of endeavor likewise teaches optical attenuating isolator (Fig. 3). Kim further teaches a first lens proximate the laser diode, the first lens arranged and oriented with respect to the laser diode to collimate light from the laser diode, a second lens proximate the second polarizer of the optical isolator core opposite the Faraday rotator, the second lens arranged and oriented to focus light from the integrated variable optical attenuator, and a section of output optical fiber having an end, the output optical fiber section arranged and oriented with respect to the second lens so that light from the second lens is focused at the end of the output optical fiber section (i.e., Fig. 3, col. 3, lines 52-67, col. 4, lines 1-10 and col. 5, lines 14-32). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the first lens proximate the laser diode, the first lens arranged and oriented with respect to the laser diode to collimate light from the laser diode, the second lens proximate the

Art Unit: 2613

second polarizer of the optical isolator core opposite the Faraday rotator, the second lens arranged and oriented to focus light from the integrated variable optical attenuator, and the section of output optical fiber having an end, the output optical fiber section arranged and oriented with respect to the second lens so that light from the second lens is focused at the end of the output optical fiber section as taught by Kim in the system of Harker et al. One of ordinary skill in the art would have been motivated to do this since allowing insertion loss can be reduced, and that the number of optical transmission media used is reduced, thus preventing generating of loss caused by the optical transmission media.

8. Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harker et al (Pub. No.: US 2004/0051932) in view of Kim (US Patent No. 6,297,901) and further in view of Scerbak et al (US Patent No. 4,909,612).

Regarding claim 16, the combination of Harker et al and Kim differs from claim 16 in that he fails to specifically a first linear polarizer and a second linear polarizer. However, Scerbak et al in US Patent No. 4,909,612 teaches a first linear polarizer and a second linear polarizer (i.e., Figure 1, col. 3, lines 25-67 and col. 4, lines 1-65). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the first linear polarizer and second linear polarizer as taught by Scerbak et al in the system of the combination of Harker et al and Kim et al. One of ordinary skill in the art would have been motivated to do this since allowing assuring a given linear polarization of the optical beam.



Regarding claim 17, the combination of Harker et al, Kim and Scerbak et al teaches the second polarizer comprises a linear polarizer having a second transmission axis aligned at 45.degree. with respect to said first transmission axis (i.e., Figure 1 of Scerbak et al, col. 3, lines 25-67 and col. 4, lines 1-65).

Regarding claims 18-22, the combination of Harker et al, Kim and Scerbak et al teaches further comprising: a base, said laser diode, first lens, integrated variable optical attenuator; second lens and said end of said output optical fiber section mounted thereto; and a package enclosing said base, said laser diode, first lens, integrated variable optical attenuator and second lens, a portion of said output optical fiber section removed from said end mounted to said package (i.e., Figs. 1 and 6-8 of Harker et al and Fig. 3 of Kim).

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Art Unit: 2613

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.



**HANH PHAN  
PRIMARY EXAMINER**

# REPLACEMENT SHEET

1/5

Approved  
HP  
06/09/07

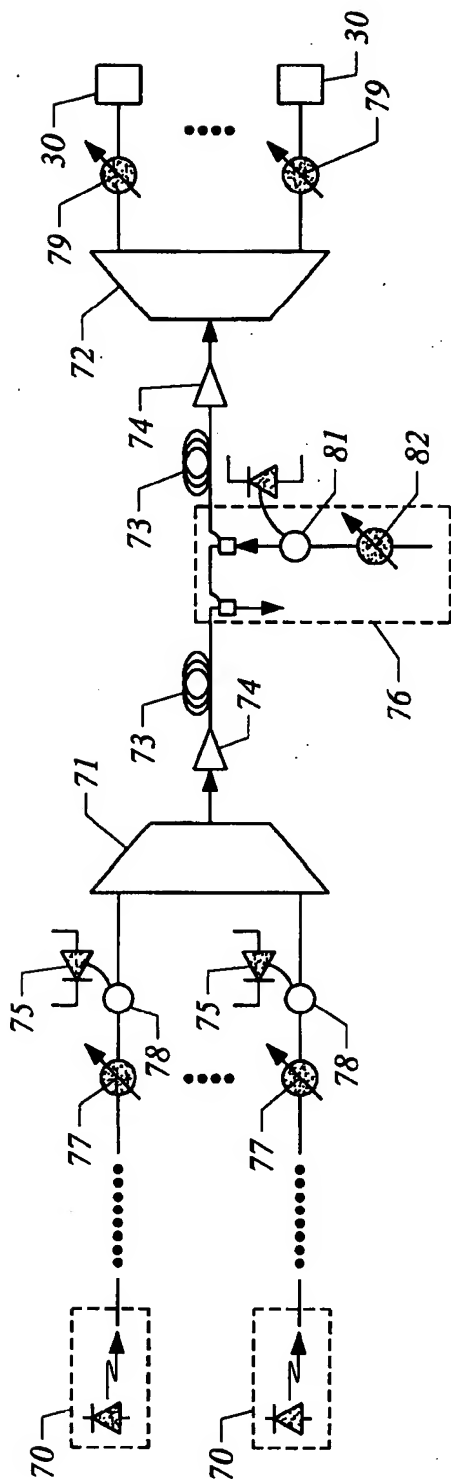


FIG. 1A

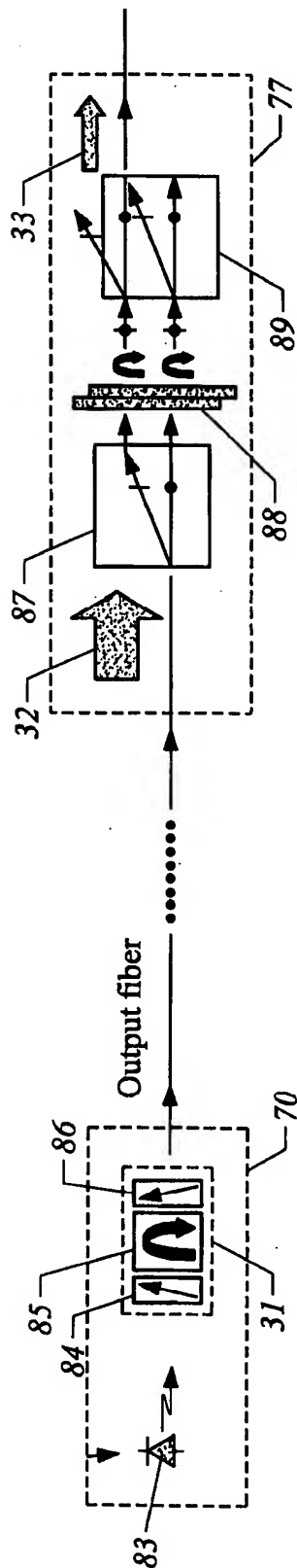


FIG. 1B

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2/5

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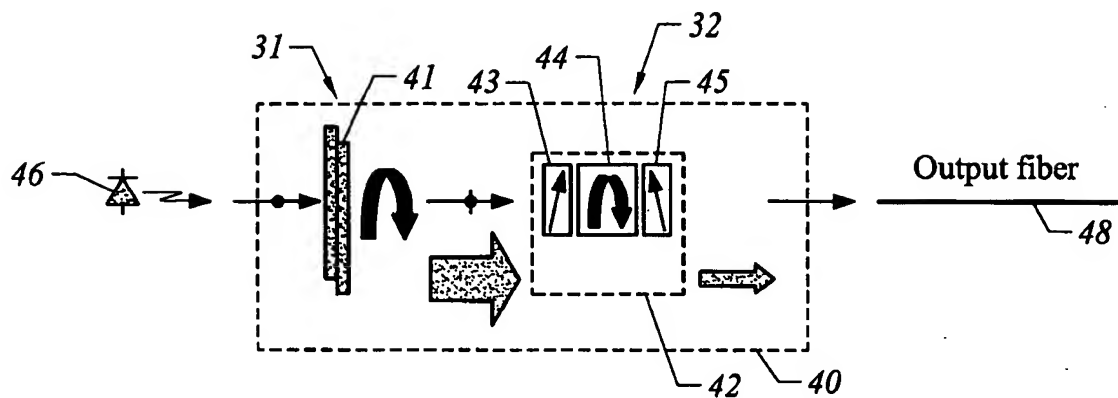


FIG. 2

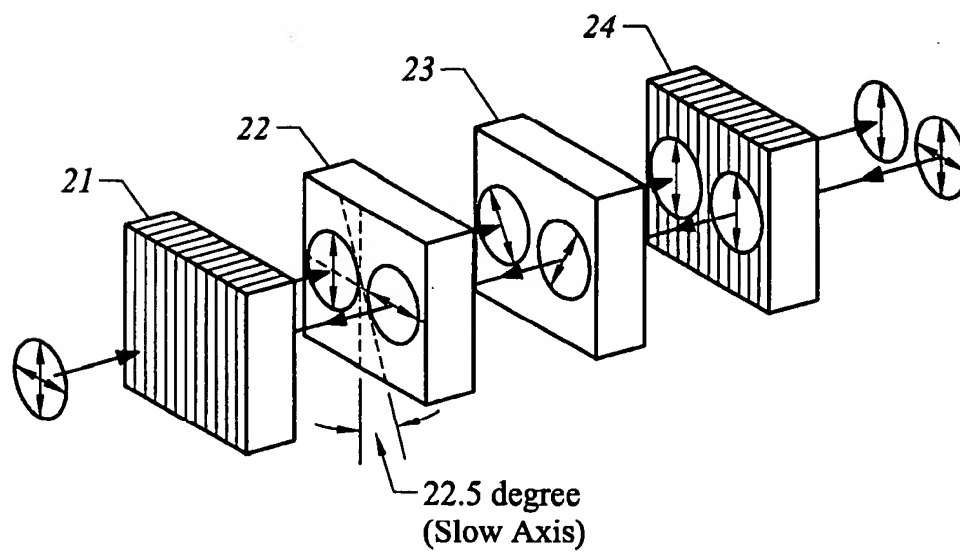


FIG. 3

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3/5

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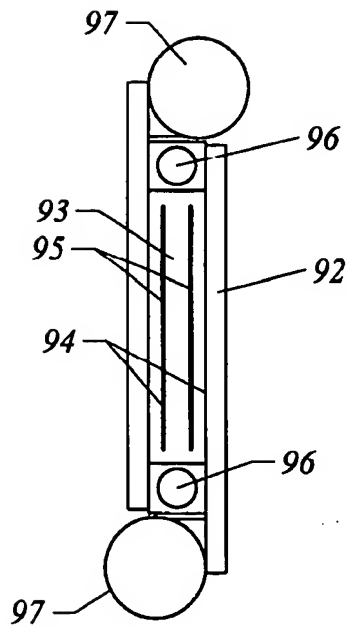


FIG. 4A

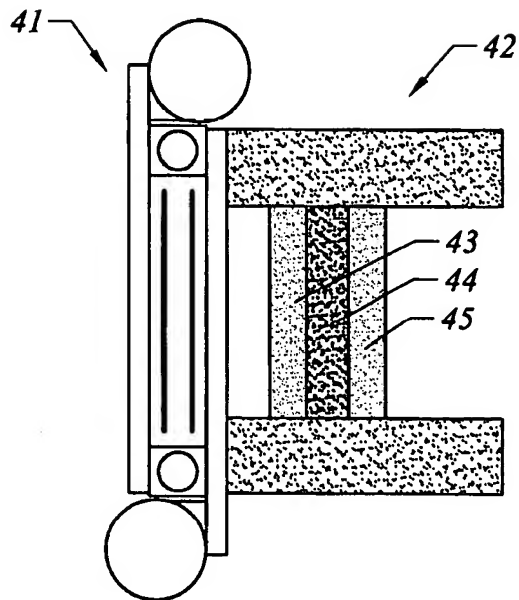


FIG. 4B

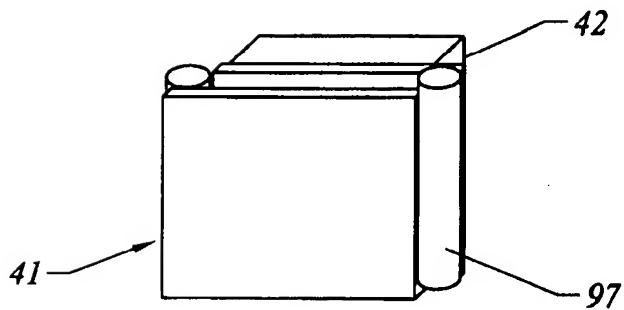


FIG. 4C

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4/5

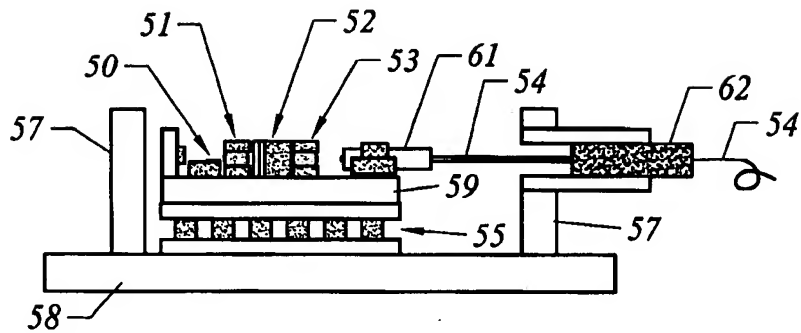


FIG. 5A

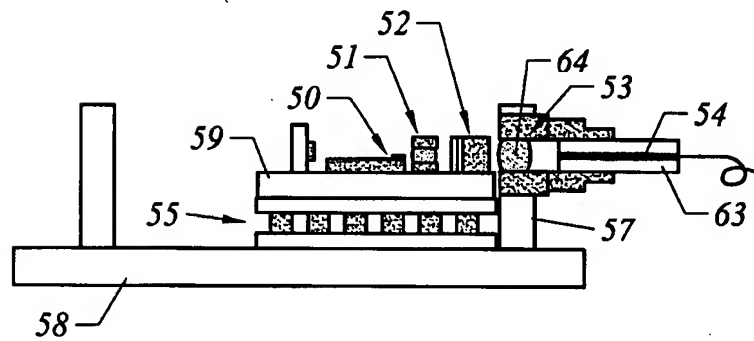


FIG. 5B

# REPLACEMENT SHEET

5/5

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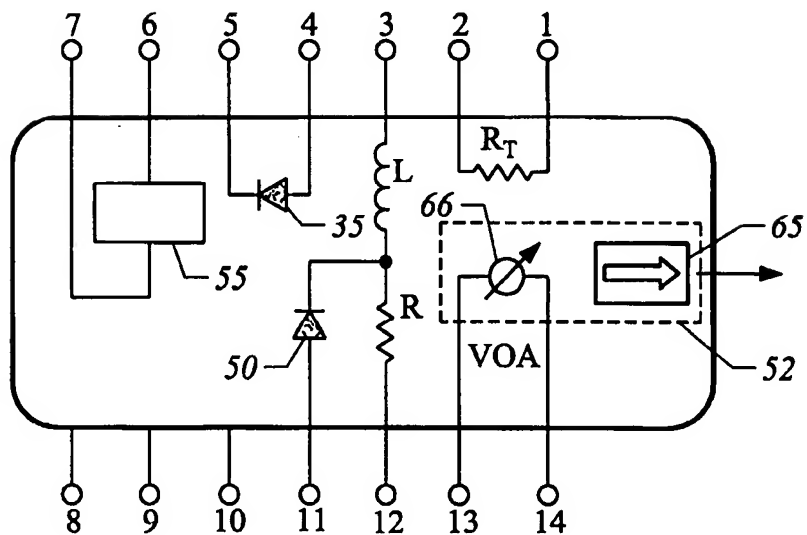


FIG. 5C

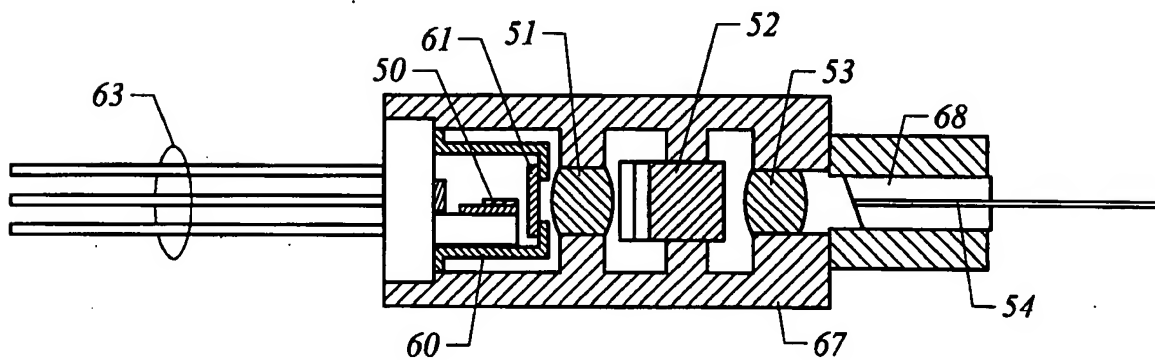


FIG. 6